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Strengthening of the coordination of humanitarian and disaster relief assistance of the United Nations, including special economic assistance: special economic assistance to individual countries or regions

International cooperation and coordination for the human and ecological rehabilitation and economic development of the Semipalatinsk region of Kazakhstan

Report of the Secretary-General

I. Introduction

1. The Soviet Union initiated the Semipalatinsk nuclear testing range on 29 August 1949 by exploding a plutonium bomb. Tests continued in the Semipalatinsk test site, which came to be called the Polygon, for more than 40 years until the President of Kazakhstan closed the testing range by Decree No. 409 on 29 August 1991.[1] The explosion of over 500 devices within the Polygon profoundly damaged the communities in the Semipalatinsk region, which, even today, face a complicated web of hardship, linked to the testing of nuclear weapons, that destabilizes most aspects of their lives.[2]

2. Nearly 50 years after the first bomb was exploded the General Assembly recognized the seriousness of the situation in the Semipalatinsk region by adopting resolution 52/169 M of 16 December 1997, in which it called on the international community to assist the Government of Kazakhstan in its efforts to meet the needs of those affected by the history of the Polygon. The Assembly requested the Secretary-General, in cooperation with interested Governments and relevant organizations and agencies to compile a report on the humanitarian situation in the Semipalatinsk region in order to assist the Government of Kazakhstan in the formulation of a recommended overall action plan to address the humanitarian, ecological and economic problems and needs of the region.

3. The present report has been compiled pursuant to General Assembly resolution 52/169 M and reflects the findings of a joint mission of the United Nations, the Government of Kazakhstan and other participants from the international community, which was deployed from 15 to 30 June 1998 and which was charged, *inter alia*, with assessing the impact of the testing activities on the problems and needs of the people of the Semipalatinsk region in four areas, namely, the environment, health, economic recovery and humanitarian assistance.

[1] The boundaries of the test site – the Polygon – encompass the Semipalatinsk Departments of East Kazakhstan Oblast (54 per cent), Pavlodar Oblast (39 per cent) and Karaganda Oblast (7 per cent).

[2] The Semipalatinsk region refers here to all the areas affected by the nuclear testing programme: Semipalatinsk and East Kazakhstan (Ust-Kamenogorsk) and the Departments of East Kazakhstan Oblast, Karaganda Oblast and Pavlodar Oblast.

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II. Background

4. During 40 years of testing, the equivalent of 17,400,000 tons of TNT were exploded in the 18,500 km^2 Polygon. Between 1949 and 1963 all 116 tests were undertaken at atmospheric and ground levels. In 1963 the tests went underground when the Soviet Union signed the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water (5 May 1963). The impact of those tests would include the creation of Lake Balapan, the "atomic lake", and the release of radioactive gases into the atmosphere. Overall the tests increased radioactive contamination on a local and regional scale. In addition, the underground testing disturbed ecological relationships accelerating the desertification that is evident in the area today.

5. The health of the population would also be affected by the testing. Local, descriptive studies attribute a variety of illnesses, including cancer, to the radiation that followed the tests. However, the real impact of the Semipalatinsk nuclear testing ground on the people of the Semipalatinsk region involves more than the effects of exposure to radiation immediately following a test.

6. Regarding the affected population and, according to the Law on Social Protection of the Citizens and Victims of the Semipalatinsk Nuclear Test Site, issued on 18 December 1992, the Republic of Kazakhstan recognizes that 1.6 million persons received radiation as a result of activities in the Polygon. The original figure has been reduced to 1.2 million people as of 1998, through birth and death rate differentials and emigration. The remaining 1.2 million people continue to live in East Kazakhstan (1,100,000), the Karaganda Oblast (48,000) and the Pavlodar Oblast (52,000). In the 1992 law, the Government identified approximately 67,000 persons living in 19 villages in four *rayons* (townships) as having received the heaviest radiation with a dose of more than 1 sievert (Sv), with the maximum dose found in this group of about 2.8 Sv. About 27,000 from this group survived, together with 39,600 of their second generation and 28,900 of their third generation offspring, bringing their extended family total number to 103,500 people. These people live in the *rayons* in immediate proximity to the Polygon.

7. During the lifetime of the test site, the Semipalatinsk region became heavily dependent on economic activities associated with the nuclear testing ground. As many as 400,000 people were involved in the functioning of the test site when it was fully operational. Analysis of the effects of the Semipalatinsk testing ground must reflect the overall context of the dissolution of the Soviet Union and the massive shrinkage of the economy of the Semipalatinsk region. While recorded unemployment for the Semipalatinsk region is 6.4 per cent, real unemployment is approximately 50 per cent higher than the average for Kazakhstan; tax bases have shrunk drastically; social services are faced with greater numbers of the needy and fewer resources to support them; and the Government is facing challenging economic reform. The rapid economic deterioration, its technological nature and remarkable duration all combine to make the crisis in the Semipalatinsk area unique.

8. The Government of Kazakhstan took immediate steps to ensure its support for the proper implementation of resolution 52/169 M by establishing, early in 1998, a Governmental Inter-Ministerial Committee to address the issues related to the Semipalatinsk region. The Committee includes representatives from the Ministries of Foreign Affairs, Ecology and Natural Resources, Defence, Labour and Social Protection, Education, Culture and Health, Science and Planning and the Agency for Strategic Planning, the East Kazakhstan Oblast, the National Nuclear Centre and two non-governmental organizations (Nevada-Semipalatinsk and Polygon-29). The United Nations Development Programme (UNDP) took action by (a) taking the initiative to invite formation of United Nations inter-agency task forces at the field and Headquarters levels, and (b) deciding to try to field a joint United Nations and Government expert mission. Following approval of the UNDP Crisis Committee, financing of those activities and the resulting action plan was obtained through the special UNDP funds available for countries in special development situations, in addition to in-kind contributions from United Nations agencies, interested member States and non-governmental organizations, and in-kind contributions from the Government of Kazakhstan. The United Nations Headquarters Task Force consisted of representatives of the United Nations Children's Fund (UNICEF), the Office for the Coordination of Humanitarian Affairs, the International Labour Organization (ILO), the International Atomic Energy Agency (IAEA), the United Nations Industrial Development Organization (UNIDO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO) and UNDP, and the field-level Task Force consisted of all United Nations agencies represented in Kazakhstan. These task forces initiated the necessary collaboration and coordination between agencies, assisted in the identification and fielding of experts and provided substantive inputs to the process.

9. In order to develop a comprehensive understanding of the problems and needs of the population of the Semipalatinsk region and pursuant to resolution 52/169 M,

more than 20 international experts in the areas of radiation, health, economic recovery, ecology and humanitarian assistance were brought in with the assistance of Member States (Japan, Russian Federation, United Kingdom of Great Britain and Northern Ireland and United States of America), United Nations organizations (IAEA, UNDP, UNESCO, United Nations Population Fund (UNFPA), UNICEF, UNIDO and WHO) and international non-governmental organizations (Counterpart Humanitarian Assistance Partnership, National Radiological Protection Board and General Board of Global Ministries of the United Methodist Church). These international experts collaborated with a group of between 25 and 50 national experts from the Government and non-governmental organizations. The experts were deployed for two weeks, beginning on 15 June, to analyse the situation in their respective sectors and contribute to the preparation of the overall action plan for review by the Government, and the results were summarized at a workshop held at Almaty in June 1998.

10. Guided by its terms of reference, resolution 52/169 M and relevant laws of Kazakhstan the mission compiled its findings aiming to (a) analyse the scope of the problem; (b) identify priority needs; (c) develop strategic responses; and (d) propose concrete projects. Information and data were principally drawn from five sources, namely, documents prepared by national officials and specialists; in-depth discussions with counterparts; site visits to critical locations in and around the city of Semipalatinsk and Kurchatov town; interviews with the affected population; and exchange of views within the mission. Because the team worked primarily in the vicinity of Semipalatinsk city and Kurchatov town the geographical area covered was not exhaustive. However, steps were taken to ensure the participation of representatives from areas of the Semipalatinsk region that were not visited, including Pavlodar and Karaganda.

11. At the termination of the fact-finding stage of their work, the mission prepared preliminary strategic recommendations and corresponding proposals for activities in the four sectors under review. These findings were then tabled at the workshop of 60 persons held at Almaty on 29 and 30 June 1998, which brought the mission together with national and international experts. The workshop reviewed and revised the findings and proposals of the mission and produced agreed upon documents, reflecting the review process, in each sector. The agreed findings and proposals formed the substance of the draft overall action plan addressing the ecological, health, economic and humanitarian problems and needs of the Semipalatinsk region. The mission report, together with a draft action plan, was then submitted for Government review at a meeting of the Inter-Ministerial Committee on 3 July 1998.

12. The methodology used during the mission attempted to take full advantage of the cross-sectoral and comprehensive nature of its terms of reference and expertise. The following aspects notably affected the methodology of the mission:

(a) Particular recognition was given to the fact that this is a region in crisis. While bearing many of the characteristics of a slow onset disaster, the situation is complicated by the rapidity of the area's economic deterioration following the closing of the test site, by the technological elements of today's crisis and by the remarkable duration of the events that brought the region to its present state.

(b) The mission took a strategic, programmatic approach, differentiating between the short-term and medium-term high-impact needs, and the longer-term issues with a more public investment character.

(c) The process was selective, emphasizing feasible ideas and proposals. Cost-effective, immediate impact interventions were preferred. The mission took special account of the experience from past and ongoing interventions by Government and the international donor community, both in terms of lessons learned and in terms of balancing remaining needs.

13. The main findings of the mission, summarized below, are treated at greater length in the annex, which is an integral part of this report.

III. Situation in the Semipalatinsk region

14. In each sector, the impact of testing was examined, the larger context is described and priority actions were identified. While each of the four sectors are presented individually, there is a clear relationship between the different strategic responses being proposed, with four major themes characterizing all proposals, namely, utilizing the wealth of human resources already available in the Semipalatinsk area through capacity-building; improving all aspects of assessment and analysis related to this very complex crisis, in order to develop optimal strategies; targeting asset transfer and investment towards those activities that are likely to be sustainable and have the greatest impact for value; undertaking information dissemination to ensure that affected communities are fully

informed of the situation and strategies for improving their lives.

A. Environment and ecology

15. The impact and after-effects of activities in the Polygon on ecology, environment and agriculture were significant. The testing of weapons resulted in serious damage inside the Polygon, including the loss of agricultural land, destruction of landscape, ecosystems and traditional ways of life. The concerns of local communities were exacerbated by the absence of a monitoring and public information dissemination system, particularly relating to natural environments, drinking water, foodstuffs and other agricultural products.

16. While a lack of environmental records makes it difficult to estimate the full scale of the damage resulting from the tests and related activities, there is a body of knowledge on the current ecological effects of the testing. At least 4,500 km^2 of land within the Polygon is reported to be contaminated by caesium 137 and strontium 90, beyond the legal standards of Kazakhstan. There is also evidence of significant contamination by caesium and strontium of soil, rocks and hydrosphere at several locations within the boundary of the Polygon, including the Chagan and Ashi-su Rivers, Lake Balpan and other water bodies within the testing area.

Priority needs

1. Developing a comprehensive land-use strategy

17. The first obligation to communities in the Semipalatinsk test site territory is to protect them from harm and risks related to the test site. This will require the development of an understanding of the full radiological conditions and a strategy for addressing them. When this strategy is determined, community-based management mechanisms will be required to ensure that land-use decisions are respected.

18. Radiation safety must be central to any land-use strategy for the Polygon. Many sites are contaminated by caesium, strontium and other radioactive elements, while contamination by plutonium is still largely unstudied. Economic activities on contaminated lands can lead to increased risk of exposure of people. It may also be that products obtained at the test site are radioactively contaminated. Therefore projected economic uses of the site should be based on the results of a radiological assessment. Studies and assessments are required for a full understanding and identification of significant environmental problems associated with the test site. Monitoring of the radiological situation should be part of an assessment programme that defines subsequent monitoring activities.

19. No land-use strategy will be effective without community cooperation and appropriate enforcement. The issues of radiological safety and environmental sustainability should not only be scientifically researched but also be translated into an enforceable land-use code, and adequate implementation measures such as demarcation of the land and fencing. Community involvement in land-use management is essential because the capacity of authorities to enforce the regulations will always be limited. Citizens of the affected territories, especially schoolchildren, should be better informed about the risks associated with radioactive contamination and the commonly available safe practices. In this way, fear of underground radiation will be reduced, safer practices will be introduced and the confidence of the local population in their ability to control risks will be strengthened.

2. Dissemination of information

20. Public dissemination of information will be crucial to a successful environmental programme, not least because one result will be an improvement in the system of environmental information management by government agencies. This improvement will, in turn, expedite the reform of current practices of storing, analysing and disseminating environmental information and establishing better information exchange both within the region and internationally.

3. Direct environmental protection

21. Communities also require direct assistance to recover essential elements of rural infrastructure, particularly water supply systems, and to address outstanding environmental hazards. These include an environmentally significant spill of aviation fuel at the airport which used to service the test site, which needs to be cleaned up.

B. Health

22. In discussing the impacts of the testing on the health of the population in the Semipalatinsk region, a distinction must be made between direct and indirect effects. With respect to direct effects, an additional distinction must be drawn between those who were affected during the atmospheric and surface tests, those who lived on

contaminated lands during and after the tests and those born to individuals who meet both of the first two criteria. The direct effects of radiation include cancer. The high levels of exposure received at the time of the above-ground testing of nuclear devices may well have led to a number of these effects, in particular, a statistically significant increase in the incidence of cancer over many years in the most highly exposed. The evidence so far would indicate that the current levels of exposure will not result in any detectable increase in cancer incidence. It is necessary, however, to consider future exposure due to changes in the use of the test site.

23. Indirect health effects include a variety of somatic conditions and a serious psychosocial impact associated with a lack of understanding of the radiological conditions of the test site and the surrounding area. These effects are connected to the closure of the test site and related political and economic events, including those which have seen the health care system deteriorate to the point where insufficient financing has left most hospitals and ambulatory care poorly staffed and buildings badly lacking in maintenance. There is infrastructure in place but equipment and resources for running costs are lacking. This is reflected in the shortages of medicines, inadequate equipment, poor diagnostics and outmoded treatments found in the region's medical facilities.

Priority needs

1. Research and assessment

24. An assessment of medical and sociological problems in the region should address both cancer and non-cancer issues as well as other health conditions such as cardiovascular disease and overall concern for immune suppression. Information-gathering exercises should also include discussions of perceptions of threat and "radiophobia". This assessment will form the basis for interventions at all levels, in urban and rural areas. Such a registry would be most effective as a cooperative resource that can be accessible to all appropriate organizations in Kazakhstan.

2. Addressing somatic pathologies: health care

25. A variety of non-cancer conditions are of concern to the local medical community, including circulatory, digestive and respiratory diseases, endocrinologic, gynaecologic, non-cancer blood diseases and cataracts. There is also special concern in the Semipalatinsk region about weaknesses and ailments of the immune system. This issue is particularly important given the widespread incidence of hepatitis A and B and tuberculosis in the area. Reducing the prevalence of anaemia is also of concern to the general population. Additionally, psychosocial health issues present a unique challenge in the region. Mental health care is curative in approach, with an emphasis on mental illness and behavioural abnormalities. Mental health promotion and preventive aspects of mental health are a low priority. As a result, prevailing strategies applied to psychosocial issues fail to address problems in their entirety.

3. Oncology: early diagnosis and treatment

26. A historical lack of health screening programmes has created a serious gap in the ability to detect health problems early. Currently increases in breast cancer, for example, are being documented in the affected population. Unfortunately, the majority of cases are being diagnosed at a later stage when treatment is most costly and least likely to be successful. Furthermore, treatment options are limited primarily to surgery and radiotherapy, owing to the lack of access to chemotherapeutic resources. Unfortunately, even the current radiotherapy units available rely on equipment that is between 30 and 40 years old.

4. Dissemination of information

27. It is also essential that a capacity be established to inform the public of all relevant developments and findings in the health sector as well as to utilize research undertaken in the region by national and international groups.

C. Economic recovery

28. Because the test site was located in a sparsely populated area, the immediate effects of radioactive pollution on employment have been relatively modest and have largely been limited to agriculture. More fundamentally, the establishment and operation of the test facility distorted the local economy in ways which made it exceptionally vulnerable to the far-reaching external changes which have come about since 1991. The break-up of the Soviet Union meant that the test site territory, which had previously been at the geographical centre of a market of 340 million people, suddenly found itself on the margins of a market of 17 million. The collapse in orders from the Soviet defence forces destroyed the viability of whole industries in the area, including major plants producing food and uniforms for the army. This in turn undermined the viability of local suppliers, including much of the farm sector.

29. The prospects for economic recovery are further complicated by the historical relationship between government and the enterprise sector, which is inappropriate

for the emerging market economy. Bureaucracy and the taxation system pose a heavy burden, while the structures which exist in mature market economies to support business activity are lacking. The absence of a developed and competitive financial system means that credit is costly and hard to obtain for businesses that are small, or operating in high-risk areas such as agriculture. Economic recovery at the local level is also impeded by the long history of isolation from the outside world of the Semipalatinsk region. Even by post-Soviet Union standards, the network of external contacts which are crucial to the operation of a dynamic market economy is almost entirely lacking.

Priority needs

1. Building local leadership

30. Economic development is inherently medium-term and long-term in focus. In the test site territory, the extent and structural nature of poverty means that outside intervention alone will never resolve the problems. The task of building local capacity to promote economic recovery is therefore urgent. Highest priority should be given to developing the capacity of the local community to construct and carry out effective and locally appropriate economic development strategies based on current opportunities. The object is to assist local communities to take a more proactive and strategic approach to business development, employment and wealth creation, by assisting local actors to draw on experience in market economies and the other parts of the former Soviet Union.

2. Skills and resources

31. A number of horizontal initiatives addressing needs in all sectors are also required. Here too, the underlying rationale is to build capacity and address priority needs in the local economy. Three areas must be addressed, namely, the establishment of a loan facility for small and medium-sized business and a credit scheme for agricultural producers; an energy-saving initiative; and an initiative to increase the availability and improve the quality of training in the Semipalatinsk region.

3. Focused projects

32. Although the nuclear issue has generated extensive contacts in fields of nuclear safety and medicine, international business interest in Kazakhstan has largely ignored the communities adjacent to the test site. Without the attraction of oil or gas, positive efforts are needed to explore new markets, to overcome the negative associations of the Semipalatinsk test site territory and to promote the area to the international business community in a positive light, as well as bring in revenue.

D. Humanitarian assistance

33. There is an alarming dynamic at work in the Semipalatinsk region, where people who some years ago were capable and contributing citizens are now joining large numbers who have fallen between the cracks, who are unable to support families, or provide for their own most basic needs and who can no longer turn for support to a Government in the midst of difficult economic reforms.

34. While the number of those who were not able to provide for themselves grew, those organizations and Government bodies that were designed to respond to just such needs were struggling with new reforms and economic policies. As a result social service institutions were closed, entitlements were frozen, budgets for social service institutions were only partially disbursed and transportation services deteriorated. The result has been a society struggling to care for the growing number of those who cannot care for themselves, while facing serious structural obstacles to doing so.

Priority needs

35. Following discussion with government counterparts and experts in the area of social protection and humanitarian assistance, the following groups were identified as particularly vulnerable and requiring assistance: disabled adults and their families, disabled children and their families, isolated elderly pensioners, institutionalized adults, institutionalized children, orphans living with foster families, poor families with five or more children, single female-headed households, women of child-bearing age, adolescents of both sexes, street children, homeless adults, prisoners and ex-prisoners. Each of these groups are seen in terms of their households, not as individuals.

1. Distribution of humanitarian supplies

36. In the short term, those vulnerable persons currently under institutional care require material support, including food, domestic and non-food items and medical supplies. Vulnerable households, as defined above also require immediate short-term assistance, in the form of food and non-food distributions.

2. Support for existing institutions and civic action

37. In a medium and long term, complementary action, entitlements, allocations and disbursements relating to social services should reflect the reality of the day. In addition, local government structures and those individual institutions that have lost some budgetary support would be greatly strengthened if they were able to generate the revenue required to meet the needs of their constituencies as well as to cover shortfalls resulting from budget cuts.

38. These actions will be fortified considerably by the strengthening of local non-governmental organizations and community-based organizations.

IV. Concluding observations and recommendations

39. In response to General Assembly resolution 52/169 M, a comprehensive mission was fielded under the joint leadership of the Government of Kazakhstan and the United Nations. The mission made the following concluding observations and recommendations:

(a) The assessment that was carried out confirmed that the long-term activity at the test site has had severe, long-term effects for a large group of people, far beyond those directly and individually affected by the radiation. The mission revealed the compelling needs of people who were affected during the testing and continue to be at risk in the future.

(b) Because of the longer-term effects of the radiation as well as of the wider consequences of the activity at the test site and its cessation, the population in the region was left exceptionally vulnerable to the economic, ecological and social consequences of the transition following the collapse of the former Soviet Union.

(c) Consideration should be given to the desirability of follow-up actions with assistance from Member States that would address the urgent needs identified, while building upon results from the specific assistance provided so far by some donors.

(d) Further assistance should take into account the comprehensive needs assessment carried out by the mission, in order to maximize impact through a structured, prioritized and coordinated approach.

(e) A consultative process in the form of a meeting or conference between Member States and with the participation of United Nations agencies should be considered to seek to mobilize the necessary support for actions proposed in this report and its annex.

(f) The United Nations should assist the Government of Kazakhstan to establish an adequate coordination mechanism for the planning and implementation of future and ongoing assistance.

Annex

Situation assessment and priority needs in the Semipalatinsk region and nuclear weapons testing site

Introduction

1. As indicated in the main body of the report, in compliance with General Assembly resolution 52/169 M, an expert team has intensively examined the consequences and needs arising from one of the twentieth century's most sustained assaults on human settlement and the surrounding environment: two generations of nuclear testing in the territory of what has been the Republic of Kazakhstan since 1991.

2. The present annex, a succinct summary of the comprehensive findings of the joint mission, is intended to supplement and complement the Secretary-General's report; they should be considered together. The history of the testing programme, general description of its impact, the institutional arrangements and process to implement resolution 52/169 M can be found in the main body of the report. This annex focuses on the actions proposed as a result of the testing, actions to address environmental, health, economic recovery, and humanitarian needs, as well as a fifth, cross-cutting, need for dissemination of information. The annex reflects an overall action plan whose components and projects have been structured and carefully prioritized from a larger pool of proposals.

3. First priority has been given to those needs of greatest urgency and impact on the affected populations, and which will prevent further risk to the region. Second are those other essential needs meriting priority action as soon as possible. Third are needs which the expert team concluded must be retained for action. In this regard, several of the most important and pressing priorities for action are expected to be implemented over three to five years, beginning with a high-impact first phase to address the most urgent humanitarian needs or radiation risks.

4. The assessment and projects proposed by the mission have been discussed extensively by more than 60 specialists from United Nations organizations and the specialized agencies, the Government of Kazakhstan, and other technical experts from Kazakhstan and the international community. The specialists were engaged in field work and consultations in the Semipalatinsk region from 15 to 28 June 1998, and an intensive review workshop was held at Almaty on 29 and 30 June, where priorities and a consensus were again considered and reaffirmed by a larger group of specialists. They included persons with expert knowledge of the nuclear programmes and radiation consequences in Japan and the United States of America and at Chernobyl. Further consultations tightened the assessment and resulted in a broader concordance and consensus about priorities.

5. The projects that respond to priority needs in the five sectors are briefly described, and the corresponding cost estimates are indicated. The cost estimates amount to approximately US$ 33.7 million for first priority projects (projects marked ***); $6.5 million for second priority (**); and $3 million for third priority (*). The approximate breakdown of estimated amounts according to teams is as follows: health, $24 million; ecological, $7.8 million; economic, $6.6 million; humanitarian, $3.3 million; and information, $1.3 million.

6. Comprehensive project plans with timelines and budgets were formulated in sectoral reports, which served as the basis for this annex. Summaries of the priority projects will be finalized and made available to the international community prior to the donors' conference which is to be convened in 1999.

Sectoral assessment and priority needs for rehabilitation

7. The difficulties facing the people of the Semipalatinsk test site territory are complex and interrelated. The Semipalatinsk test site territory refers to all the areas affected by the nuclear testing programme, namely, Semipalatinsk and East Kazakhstan (Ust-Kamenogorsk) and the Departments of East Kazakhstan Oblast, Karaganda Oblast and Pavlodar Oblast. The testing of nuclear weapons combined with new political developments to ravage the area's ecology, damage its health in ways that are not yet completely understood, cripple its economy and create serious humanitarian and social service needs. The testing contaminated water and land, shrank the economy, forced an emigration of wage earners and left behind the vulnerable and the sick that a weakened state structure could not support. Any approach to the problems of the territory must understand these relationships.

8. The proposed actions build upon the following basic principles:

Prioritization. Activities that will have the greatest positive impact on the most needy must be undertaken first. Urgency and feasibility must be taken into account. This priority principle will determine the order of projects.

Risk reduction. Activities for avoidance of further radiation exposure and ecological deterioration constitute an important parameter in setting priorities.

Sustainability. Activities must be planned and implemented to exist beyond the period of external support.

Appropriateness. Activities must be of suitable scale, acknowledging that some projects can be highly cost-effective with an initial small, rapidly implemented phase. Technologies and approaches should be effective for the local communities.

Full access. Activities should be planned and implemented so that as many people as feasible who meet criteria to participate are able to do so without having to pay a cost which causes further hardship.

Coordination. All activities must be planned and implemented in a complementary fashion. Resources from national and international origins should be coordinated to optimize effectiveness and impact.

I. Environment and ecology

A. Developing a comprehensive land-use strategy

Full radiological evaluation of the Semipalatinsk test site polygon – $3,500,000 (***)/5 years[a]

9. Radiation safety must be central to any land-use strategy for the Polygon. An adequate examination of the radiological situation and conditions and a strategy for action are required. Economic activities on contaminated lands can lead to increased risk of exposure of people to radiation. It may also be that products obtained at the Semipalatinsk test site are radioactively contaminated. Therefore projected economic use of the site should be based on the results of a definitive radiological assessment, which is required for a full understanding and identification of the most significant environmental problems associated with the site.

Sustainable land-use strategy for the Semipalatinsk test site – $600,000 (**)/1.5 years

10. Today, use of the Polygon is not adequately controlled. All activities in and around the test site require Government approval, but unauthorized activities do occur, especially unsanctioned grazing and cultivation. There is also significant pressure to open the Polygon completely for economic use, not least because of the presence of mineral deposits (coal, gold and wolfram) in sections of the test site.

11. A land-use strategy must be designed to develop economic potential and ensure environmental sustainability. Exploration and use of the natural resources of the Polygon should not irreversibly affect its fragile ecosystems, while grazing and other agricultural activities should not exceed the capacity of the land. Mining should not result in leaving the land unsuitable for further uses.

12. Community-based management mechanisms will be required to ensure that land-use decisions are respected and observed. Thus, local communities will acquire the capacity to make informed choices and to participate more fully in decision-making and enforcement procedures.

Environmental monitoring – $900,000 (**)/2.5 years

13. An environmental monitoring system should be created on the Semipalatinsk test site and other affected territories in order to control the dissemination of radionuclides and safety measures. Monitoring of the radiological situation should be ongoing and technically adequate. Local research institutions and regulatory agencies should be enabled to undertake this type of monitoring, thus contributing to improved protection of local populations and to a better understanding of environmental problems.

Evaluation of landscape and biodiversity dynamics – $200,000 (*)/1.5 years

14. The Semipalatinsk test site is a unique site because of its history of nuclear explosions. Major changes in flora and fauna are of interest to the world scientific community because they may improve the understanding of the pathways and effects of radionuclides on ecosystems.

[a] This evaluation should build on the preliminary assessment conducted by IAEA in 1994. The early phase of the programme will be to provide the necessary training and equipment for staff who will be undertaking the measurements. The initial stage may be combined with other relevant projects, such as information, education and communication projects for training.

B. Direct environmental protection

Access to safe water – $700,000 (***)/2.5 years

15. A number of the critical needs of communities in the affected territories exceed their economic resources. Access for rural communities to safe water of adequate quantity and quality is central among these needs and can be achieved by direct investment in the rural water supply infrastructure. In order to ensure sustainability of the project, communities should be involved in choosing their water options and siting water points, contributing labour to installing water supply facilities, and establishing organizational and economic mechanisms for long-term maintenance.

Air base fuel clean-up – $1,900,000 (***)/1.5 years[b]

16. Another extremely important objective is to remove the aviation fuel spillage at the military air base that served the Semipalatinsk test site. The Irtysh River is threatened with contamination by this massive spill. The possibility of contaminants travelling to neighbouring countries such as China and the Russian Federation via the river internationalizes this potential threat. Resources and technical expertise available in the region are not sufficient to resolve the problem. Assistance should be rendered to clean up the site and remove the risk of the contamination of the Irtysh River.

II. Health: assisting victims of radiation and the nuclear era

A. Research and assessment

Registry of epidemiological assessment of medical and radiological problems – $1,350,000 (***)

17. There is a need to establish a national registry of individuals that are included in the ultimate target population of the region. Such a record would be an important tool in a number of national, regional and local efforts to resolve the problems associated with the testing programme and its impact today. It must be a cooperative resource that can be accessible to all appropriate organizations in Kazakhstan. As such it should be maintained as a part of the proposed clearing house programme. Its functions will include collection, processing and provision of data. When created it will, among other things, permit the targeting of programmes of intervention so that they may reach specific groups at various degrees of direct risk and provide a mechanism for assessing outcomes of treatment.

Establishment of a clearing house – $1,200,000 (**)

18. Public health responses to the situation in the Semipalatinsk region have been hampered by debilitating resource shortages and absence of objective medical information. A resource centre (clearing house) should be established to utilize research undertaken in the region by national and international groups. This will allow for the analysis of existing results and for rationalizing further research. Such a distinct entity would also contribute to deeper understanding of both technical and non-scientific information which is potentially relevant and of interest for the world scientific community. In addition to making gains in the area of research, such a centre would play a role in maintaining the local tradition of professional excellence in the scientific field.

Population safety and disaster preparedness – $300,000 (**)

19. There is a potential risk of an emergency situation, taking into consideration the current use of remaining reactors, movement and storage of fuel, possible airborne transmission of plutonium, etc. A disaster preparedness plan should be formulated to prepare for such an emergency. An inventory list of all radionuclides, their activities, chemical composition and location should be created. Maps with contamination traces of radioactive plumes that resulted from nuclear tests and an assessment of any residual risk should be made available as soon as possible, and then routinely updated and distributed among government and civic groups.

B. Addressing somatic/psychosocial pathologies: improving health care

Primary health care facilities in Semipalatinsk, Kurchatov and other cities – $3 million (***)/3 years

20. There is a great need for properly functioning, cost-effective and integrated primary health care facilities. Health problems to be addressed include a number of non-cancer diseases: circulatory, respiratory, digestion, endocrine, gynaecological, blood diseases and cataract. The longer-term

[b] Water contaminated by aviation fuel is pumped from the acquifer, "skimmed", biologically treated and returned to the river; the waste kerosene/water mixture is either burned or safely disposed. Implementation may be undertaken by more than one donor, and may be phased accordingly.

consequences of weakened immune systems are of major concern to the physicians in the Semipalatinsk region. This matter becomes especially important considering the spread of hepatitis A and B and tuberculosis.

21. A full understanding of the relationship between somatic pathology and radiation exposure in the region must be promoted and supported. Early diagnosis, treatment and rehabilitation of population with post-radiation pathologies need to be carried out among affected groups. New information should be routinely incorporated into training programmes, including continuing and professional education. Programmes to develop diagnostic capacity should also be undertaken, including the modernization of equipment and increasing availability of reagents and other required consumable supplies to improve diagnosis and treatment.

22. Activities to promote better primary health care should build on the integrated, primary care oriented health reform programme that has been implemented in the Semipalatinsk region since 1995.

Community-based health programme – $5 million (***)/5 years

23. Prior attempts by the international community to train and sustain the effort to shift towards the primary care approach have been severely limited by lack of facilities to apply knowledge gained. Necessary human resources and basic infrastructures already exist in this unique region that was once the centre of nuclear technology: financial and technical assistance from the international community now will have catalytic effects in bringing the region back to sustainability.

24. A community-based health programme will facilitate capacity-building in small villages of 300 to 500 inhabitants. A community health worker will be selected from the local group and will be sent abroad for training to bring to the village knowledge and basic skills for personal health care. Community involvement has a special significance; it builds the capacity of local peoples, prolonging the effects of donor assistance beyond the period of external support.

Monitoring and treatment of women and children – $6,300,000 (***)/3 years

25. Women and children inevitably endure additional difficulties during periods of hardship. This is particularly true in the Semipalatinsk area. In addition to the health uncertainties unique to the general situation in the Semipalatinsk region, there are a number of other difficulties. There are more than two abortions reported for every birth in the region, where the birth rate is the lowest in the country (below 0.9 per cent in 1997). The prevalence of abortion is often attributed to fear of genetic abnormality in offspring. In addition, unwanted pregnancies are common among the very young and the very poor in the area. The unchecked spread of sexually transmitted diseases further complicates matters. These developments must be addressed, potentially in phases and distinct components, many of which can be mainstreamed into health care programmes. Genetic screening and counselling should also be included in the programme; a high number of chromosome pathologies are being registered among the exposed population and risks continue among their offspring. Complementary education programmes should be designed for paediatric wards and maternity hospitals.

Anaemia prevention programme – $750,000 (**)/2 years

26. Anaemia is central among somatic diseases that are of particular relevance to the health and well-being of women and children. Linked to deprivation, poor feeding and unavailability of appropriate care, anaemia supports a vicious cycle of illness and is a significant contributor to child morbidity and mortality. This situation is made worse by the absence of any promotion of breast feeding. This is particularly unfortunate, considering that breast feeding would do much to contain dramatically high rates of neonatal mortality, as well as contributing to overall child health.

Treatment of neurotic disorders (stress somatoforms) – $50,000 (*)/2 years

Treatment of behavioural and emotional disorders among children in the rural Semipalatinsk test site territory – $50,000 (*)

Psychiatric and psychological capacity-building and training – $120,000 (***)

Establishment of a psychological support network in the rural Semipalatinsk test site territory – $60,000 (***)

Psychological protection of vulnerable urban groups – $20,000 (*)

27. There is strong evidence that a serious psychosocial effect has resulted from the testing, associated with a lack of understanding of the radiological conditions of the test site and the surrounding area. This is particularly the case in a medical culture that generally emphasizes psychiatric

interventions rather than health promotion and psychosocial care.

28. Psychosocial health issues present a unique challenge in the Semipalatinsk region. Mental health care is curative in approach, with an emphasis on mental illness and behavioural abnormalities. Little attention is paid to prophylaxis aspects and propaganda of mental health issues. As a result, prevailing strategies applied to psychosocial issues fail to address problems in their entirety. In addition, there are serious shortcomings in the region regarding the understanding of the significance of mental health management plans, and staff training is inadequate.

29. Institutions of higher education in Semipalatinsk have demonstrated serious interest in upgrading their knowledge of mental health issues and the extension of such knowledge into rural areas through community-based interventions. This interest should be pursued. In addition, psychological support, knowledge and training should be offered to nurses, rural physicians and health care providers in villages in the vicinity of the test site. Targeted psychosocial support should also be offered to those vulnerable groups identified as requiring humanitarian assistance. These groups can be reached by targeting particular institutions (orphanages and institutions for the mentally handicapped, for example). Finally, the region's existing emergency management plans and training should reflect awareness of stress management issues.

C. Oncology: early diagnosis and treatment

Early detection and treatment of oncological diseases, with emphasis on breast cancer – $6 million (***)/5 years

30. Delayed cases of breast cancer still affect a significant number of women who were under the age of 20 when exposed to the radiation. Early detection and screening programmes should be updated and implemented. Efforts to improve the facilities for individuals identified through such programmes must also be improved. Appropriate medication for diagnostic and support treatment and follow-up must also be developed. Only screening programmes answering to basic prerequisites, such as effectiveness, existence of the treatment, acceptability for the population, as well as costs should be considered. This activity can be implemented in phases and by component but is a high priority overall.

III. Economic recovery and renewed opportunities

A. Building local leadership

Semipalatinsk economic development partnership – $600,000(**)/3 years

31. It is necessary to promote locally rooted, market-oriented economic development based on partnership between local authorities and the business sector. The aim of the partnership initiative will be to develop and implement on a pilot basis an economic development strategy through a series of business development initiatives with local enterprises. The process of privatization moved ahead relatively quickly in the Semipalatinsk region after 1994, with the result that ownership is already fairly diversified. There is an active association of small businesses in the city which is developing business support as well as representational functions. These developments will facilitate implementation of the proposed partnership.

Semipalatinsk business centre – $600,000 (**)/2 years

32. Collaboration between the administration and the business sector should be enforced because of the strengthening of economic development by means of a number of projects to be implemented by the enterprises. At the same time the existing resources must be increased through the creation of a business centre. The business centre would be operated in conjunction with city authorities, enterprises, the university and other locally based organizations. The exact compass of these initiatives will need to be discussed in detail with the relevant authorities.

Establishment of an economic development agency covering the area immediately adjacent to the Semipalatinsk test site (Kurchatov) – $600,000 (**)/3 years

33. An economic development agency based in Kurchatov would be in a position to address the needs of more remote population centres that suffered the most direct effects of the closure of the test site. Promoting new and sustainable business enterprises in Kurchatov will also help to bring about balanced development in the region as a whole by helping to slow the flow of destitute people from rural to urban areas, which is seriously aggravating the economic situation in the test site territory.

B. Skills and resources: private sector support

Finance for micro, small and medium-sized businesses – $1,400,000 (***)/5 years[c]

Agricultural credit – $1,200,000 (***)/5 years

Agricultural information system – $300,000 (**)/2.5 years

Farmer-to-farmer exchanges – $250,000 (*)/2.5 years

Business support and skills training – $800,000 (***)/5 years

34. Business development in the Semipalatinsk region is seriously handicapped by the lack of appropriate financial services. In the absence of a fully competitive banking sector, lenders demand high interest rates and security which is often not available to small business or agricultural producers. Business growth requires ready access to credit. In the case of agricultural producers, provision of credit is required to support the introduction of better farming techniques and to increase the scale and efficiency of agricultural production, eventually arresting current land degradation patterns.

35. Credit for agricultural producers should also be provided to allow them to purchase inputs necessary to undertake agricultural activities. Dissemination of information on new agricultural technologies, management ideas, markets, fairs, prices and health issues will also enliven possibilities for activities. By funding farmers to travel to other countries in the Commonwealth of Independent States, knowledge and expertise can be exchanged.

36. Business training, particularly of young people, is a prerequisite for sustainable business development and should be undertaken in conjunction with other efforts to build local leadership through the economic development agency/partnership centres. Training that targets young people from low-income households should be undertaken in existing educational and training establishments. Grants should also be provided for the purchase of equipment and materials.

[c] $400,000 would be reserved for microcredit schemes for very small established and start-up businesses. This would complement the existing microcredit scheme already under way in Semipalatinsk (UNDP microcredit programme for poor women). $1 million would be reserved for loans to small and medium-sized businesses in the areas covered by the two framework initiatives.

C. Focused projects to attract the international business community

Support to town and city twinning – $60,000 (*)/18 months

Assessment of the development potential of Semipalatinsk airport – $200,000 (*)/1 year

Energy saving project – $600,000 (*)/3 years

37. Although the nuclear issue has generated extensive contacts in fields of nuclear safety and medicine, international business interest in Kazakhstan has largely ignored the communities adjacent to the test site. Without the attraction of oil or gas, positive efforts are needed to explore new markets, to overcome the negative associations of the Semipalatinsk test site territory and to promote the area to the international business community in a positive light, as well as bring in revenue.

38. Establishing twinning relationships between cities and towns in the territory and in market economy countries is a proven way of reducing international isolation. An assessment should also be made of the economic potential of developing the Semipalatinsk airport.

39. The Soviet price system and the role of the military meant that little attention was paid to energy efficiency in the past. As a result many enterprises are burdened by unnecessarily high energy bills. There is also a severe lack of expertise in energy-saving technology and design. A local capacity for energy audit is required. A project for saving energy would develop a local audit and would carry out a series of pilot energy-saving initiatives.

IV. Humanitarian assistance

A. Distribution of humanitarian supplies

Urgent humanitarian distribution of food and non-food and medical supplies – $500,000 (***)/1 year

Support for vulnerable families with school-age children – $400,000 (***)/1 year

40. Targeting 10 or 12 major residential care-giving institutions in Semipalatinsk territories with distributions of relief supplies should meet the immediate basic needs of their nearly 3,000 residents and alleviate some of the financial and other resource constraints those organizations face. Implementation should be as simple as possible, limited to procurement, distribution and monitoring. Basic

specialized equipment should also be made available to residents, including, for example, wheelchairs, crutches and hearing aids. In addition, any opportunities for indirect benefits, such as support for the region's markets through local purchase of food items, should also be pursued.

41. Children form a unique sub-group among the most vulnerable. Normalizing their lives to the extent possible should be a high priority. Ensuring that they are equipped to attend school is a powerful method of doing so. On the basis of the limited available information, it is estimated that there are 15,000 households in the Semipalatinsk test site territory whose children require school supplies (copybooks, pencils, pens, crayons) and winter clothing in order to be able to attend school. Additional support to relevant schools would allow for a single hot meal per child per school day in the affected area.

B. Support for existing institutions and civic action

Revenue-generating activities at state institutions – $650,000 (**)/2 years

Multi-purpose facilities for rehabilitation and medical services for vulnerable groups – $450,000 (*)/2 years

Extension of small grants to local non-governmental and community-based organizations – $500,000 (***)/2 years

Local non-governmental organization resource and training centre in Semipalatinsk – $800,000 (*)/2 years

42. Two complementary actions should be carried out immediately, on the understanding that they are to be pursued over the medium term. The Government of Kazakhstan should be encouraged in the strongest possible terms to adjust its social service reforms so that the basic needs of vulnerable groups in the Semipalatinsk territories are met. This should probably include ensuring that entitlements, allocations and disbursements reflect the reality of the day. In addition, local governments and those individual institutions that have lost some Government support should be put in a position to generate the revenue required to meet the needs of their constituencies as well as to cover shortfalls resulting from budget cuts.

43. In addition to directly distributing relief contributions, existing Government institutions should be assisted so as to increase their self-reliance and sustainability in the new budgetary climate. Support must be given to their efforts in the areas of income generation (for example, cultivation of institution lands, production from institution bakeries) and equipment rehabilitation (through, for example, in-house repair). Creation of a multi-purpose sanatorium which could function as a temporary shelter for those in need from the whole affected area is also proposed.

44. These actions will be fortified immeasurably by strengthening local non-governmental and community-based organizations. A healthy non-governmental presence will create a concentration of skills and dedication and the ability to attract additional resources while multiplying the impact of those that already exist. Such organizations will be able to work with the Government in monitoring, preventing and responding to the needs of the vulnerable in the Semipalatinsk region. Non-governmental organizations were found to have a greater potential for conducting more outreach and advocacy than other financially constrained governmental institutions.

45. Developing the capacity of existing non-governmental and community-based organizations will create a sustainable capacity within non-governmental groups to serve those affected by the history of the Polygon, through improved advocacy, more effective service provision and better needs identification. The outreach services of the organizations will also improve. Organizational development of this type should include training in organizational management, programme development, project and financial management, fund raising and advocacy and lobbying skills at the local, regional, central and international levels. Training initiatives of this sort should be accomplished by information dissemination initiatives, complemented by the establishment of small grants for non-governmental and community-based organizations that meet criteria related to serving the affected populations in the Semipalatinsk region, with a particular emphasis on social service and environmental issues.

V. Cross-sectoral information for risk reduction, promoting access to services and civil society participation

Project on information, education and communication (cross-cutting all four sectoral thematic groups) – $1,050,000 (***)/3 years

Strengthening community capacity for information dissemination – $250,000 (*)/2 years

46. The culture of secrecy which surrounded the Semipalatinsk test site territory will not be easily overcome. Even now, lack of information affects the everyday life of the affected population. Dissemination of validated information on the consequences of nuclear tests and the possible risk for the population of the Semipalatinsk region is crucial for initiating most activity in the region. In all four thematic areas – ecology, economy, agriculture, humanitarian aid public awareness of the current situation should be enhanced. Existing local institutions (non-governmental organizations, research institutions and Government bodies as appropriate) should strengthen their current capacities to function as the collectors and disseminators of new information gathered from improved monitoring of risks.

47. Citizens of the affected territories, especially schoolchildren, should be better informed for example about the risks associated with the radioactive contamination of water, soil or facilities, and the commonly available safe practices. Women should be better informed about methods of detecting early signs of breast cancer. Affected populations need to know where to go for services, information, or to exchange know-how.

48. There should be better community involvement and education to ensure that information is properly disseminated and discussed and that the realities that comprise the overall threats are transparently examined and fully understood. Thus, a community consultation process should be established, allowing community members to articulate their actual problems and advocate for desired changes.

49. Information on areas of relative safety should be publicized to ensure an encouraging investment climate. Thus, rehabilitated areas, as opposed to high-risk contaminated areas, should be clearly indicated. Accurate information on monitoring of radioactive materials must be accessible to the public.